

## AMENDMENTS TO THE SPECIFICATION

In paragraph 0014 of the published application, please amend the specification as follows:

“The invention provides methods of the general type comprising ~~synthesising~~ synthesizing electrocardiographic (ECG) signals by receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals and deriving at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a desired set of signals, wherein the first group of electrodes comprises the standard 12 lead electrode sites V2 and V5 plus at least one electrode positioned substantially level with V5 on the right anterior ~~axillary~~ auxiliary line, and at least one further electrode positioned on each of the right hand side and left hand side of the body.”

In paragraph 0016 of the published application, please amend the specification as follows:

“In a first embodiment of the invention, there is provided a method for obtaining a set of ECG signals of the general type set forth above wherein the electrode sites are located at: [0017] V2: the standard 12 lead electrode site V2; [0018] V5: the standard 12 lead electrode site V5; [0019] V5R: level with V5 on the right anterior ~~axillary~~ auxiliary line; [0020] RA: the standard 12 lead electrode site RA (arm, shoulder, wrist or hand); and [0021] LA: the standard 12 lead electrode site LA (arm, shoulder, wrist or hand).”

In paragraph 0022 of the published application, please amend the specification as follows:

“In a second embodiment of the invention there is provided a method for obtaining a set of ECG signals of the general type set forth above wherein the electrode sites are located at: [0023] V2: the standard 12 lead electrode

site V2; [0024] V5: the standard 12 lead electrode site V5; [0025] V5R: level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line; [0026] RC: on the upper chest of the body, at the same height as the manubrium and on the right mid-clavicle line; and”

In paragraph 0028 of the published application, please amend the specification as follows:

“In a third embodiment of the invention there is provided a method for obtaining a set of ECG signals of the general type set forth above wherein the electrode sites are located at: [0029] V2: the standard 12 lead electrode site V2; [0030] V5: the standard 12 lead electrode site V5; [0031] V5R: level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line; [0032] R: anywhere in the region of the right hand side of the body, between the front upper chest above the level of the heart and the right arm, shoulder or hand; and [0033] L: anywhere in the region of the left hand side of the body, between the front upper chest above the level of the heart and the left arm, shoulder or hand.”

In paragraph 0072 of the published application, please amend the specification as follows:

“In a further aspect of the invention, there is provided a method for obtaining a set of ECG signals of the general type comprising ~~synthesizing~~ synthesizing electrocardiographic (ECG) signals by receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals and deriving at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a desired set of signals, wherein said first group includes at least electrodes a located at the following sites: [0073] Vm: one of the standard 12 lead electrode sites V4, V5 and V6 (m =4, 5 or 6); [0074] VnR: level with one of the standard electrode sites V4, V5 and V6 (n=4, 5 or 6) on the right midclavicular line, right anterior

~~axillary~~ ~~auxiliary~~ line or right mid~~axillary~~ ~~axillary~~ line respectively ; and  
[0075] Vc: placed on the sternum.”

In paragraph 0076 of the published application, please amend the specification as follows:

“In a preferred embodiment,  $m=n$ , so that VnR is opposite Vm on the right anterior ~~axillary~~ ~~auxiliary~~ line and is therefore easier to place. In a preferred embodiment,  $m=n=5$ , so that the sites Vm and VnR are V5 and V5R respectively.”

In paragraph 0113 of the published application, please amend the specification as follows:

“FIG. 1 illustrates a standard 12 lead electrocardiograph (ECG) system well known in the art where twelve "leads" (or signals) are obtained from a subject using ten electrodes placed on their skin. These electrodes are placed in ~~standardized~~ ~~standardised~~ locations as follows: Electrode RA on the right wrist; electrode LA on the left wrist; electrode LL (or F) on the left ankle; electrode RL (or reference) on the right ankle; electrode V1 on the fourth intercostal space to the right of the sternum; electrode V2 on the fourth intercostal space to the left of the sternum; electrode V4 in the fifth intercostal space at the left mid-clavicular line; electrode V3 between V2 and V4; electrode V5 level with V4 at left anterior ~~axillary~~ ~~auxiliary~~ line and electrode V6 level with V5 at left mid-~~axillary~~ ~~auxiliary~~ line. Note that often the limb electrodes are placed on the upper arms or upper legs of subjects: this shift causes only very minor changes to the standard 12 lead ECG. However, when ambulatory movement of the subject is required, for example during a "stress-test" wherein the subject is required to physically exercise during the ECG recording, the limb electrodes are moved to the torso to avoid motion and muscle ~~artifacts~~ ~~artefacts~~ in the ECG signals. This severe shift in electrode positions can cause notable changes in the observed ECG.”

In paragraph 0116 of the published application, please amend the specification as follows:

“The electrode sites are located at: [0117] V2: the standard 12 lead electrode site V2 [0118] V5: the standard 12 lead electrode site V5 [0119] V5R: level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line [0120] RA: the standard 12 lead electrode site RA (arm, shoulder, wrist or hand) [0121] LA: the standard 12 lead electrode site LA (arm, shoulder, wrist or hand).”

In paragraph 0141 of the published application, please amend the specification as follows:

“Using the methodology for temporary leads described above, the ECG leads can be ~~synthesized~~ ~~synthesised~~ from data taken from the following electrode sites: [0142] V2: the standard 12 lead electrode site V2 [0143] V5: the standard 12 lead electrode site V5 [0144] V5R: level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line [0145] R: Anywhere in the region of the right hand side of the body, between the front upper chest (above the level of the heart) and the right arm, shoulder or hand [0146] L: Anywhere in the region of the left hand side of the body, between the front upper chest (above the level of the heart) and the left arm, shoulder or hand.”

In paragraph 0170 of the published application, please amend the specification as follows:

“FIG. 9A shows electrode site locations for the non-ambulatory mode of operation of an electrocardiograph system. Five electrodes are placed on the subject as shown in FIG. 9A. These positions are comprised of the standard 12 lead electrode sites RA; LA; V2; V5 plus the site "V5R" (level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line).”

In the Abstract, please amend the specification as follows:

“Electrocardio-graphic (ECG) signals such as the standard 12-lead are ~~synthesized~~ ~~synthesised~~ from a novel reduced electrode set. Signals are received from a group of electrodes connected to predetermined locations on a human body, and deriving at least one further ECG signal using predetermined transformation(s) (130) on said first set of ECG signals. This forms a desired set of signals. The group of electrodes may comprise the standard 12 lead electrode sites V2 and V5 plus one electrode positioned substantially level with V5 on the right anterior ~~axillary~~ ~~auxiliary~~ line, and a further electrode on each of the right hand side and left hand side of the body. In an alternative arrangement the electrode position V2 is replaced by an electrode position Vc on the sternum directly between the standard electrode sites V1 and V2. Also disclosed is a method of improving accuracy of ~~synthesized~~ ~~synthesised~~ signals by detecting body posture and modifying the transformations.”

Respectfully submitted,



By \_\_\_\_\_  
Hazim Ansari  
PatentMetrix  
40,896